

19. Explain in detail about the disorders of amino acid metabolism.
20. Assess the clinical significance of hepatic function tests and diagnostic enzymes in evaluating organ health.

NOVEMBER/DECEMBER 2025

**23UEMB12 — BASIC AND CLINICAL
BIOCHEMISTRY**

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions

1. Define a monosaccharide with an example.
2. List any two biological significances of polysaccharides.
3. List out the general properties of amino acids.
4. Identify any two functions of proteins.
5. What is hypoglycemia?
6. Compare and contrast Type I and Type II diabetes mellitus.
7. Define alkaptonuria.
8. Mention any two clinical features of alkaptonuria.



9. List two diagnostic enzymes used in clinical biochemistry.
10. What is the clinical significance of alanine aminotransferase (ALT)?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions

11. (a) Explain the structure and biological significance of glucose and fructose.

Or

- (b) Classify the types of lipids with examples.

12. (a) Distinguish between essential and non-essential amino acids with examples.

Or

- (b) Demonstrate the structure and classification of amino acids.

13. (a) Analyze the biochemical basis of diabetes mellitus and its clinical manifestations.

Or

- (b) Identify the causes and consequences of hyperlipidemia.

14. (a) Discuss the metabolic defect and symptoms associated with phenylketonuria.

Or

- (b) Examine the biochemical basis of tyrosinemia.

15. (a) Describe the principles and clinical significance of renal function tests.

Or

- (b) Elaborate the diagnostic importance of aspartate aminotransferase (AST) and lactate dehydrogenase (LDH).

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Evaluate the structural and functional roles of carbohydrates and lipids in biological systems.
17. Discuss about the classification of proteins, highlighting their biological significance, properties and functions
18. Analyze the biochemical disorders of carbohydrate metabolism

